



Structure of Polychlorinated Biphenyl (PCB) Molecule

**SPOKANE**  
**RIVERKEEPER®**

# Inadvertent Generation of PCBs

- Combination of carbon, chlorine, and high temperatures can result in PCB generation.
- Up to 200 chemical processes may create PCB byproducts.
- Products inadvertently containing PCBs include paint, inks, ag chemicals, plastics, and detergent.

— Source: EPA PCB TMDL Handbook.

# PCBs are Nationwide Issue

- Waters and their sediments contaminated by PCBs have resulted in over 675 advisories restricting the consumption of PCB-contaminated fish, shellfish, and wildlife issued in 37 states and in one U.S. Territory (American Samoa).
- 5,578 waterbodies on 303(d) list for PCBs.

**Spokane River Fish Advisory**  
Updated 2009

Spokane River fish contain chemicals called PCBs and PBDEs (flame retardants). These chemicals can be harmful to your health and the health of your children if eaten in quantities higher than advised. This advisory is for everyone; men, women, and children. Women who are or might become pregnant, nursing mothers, and young children should pay special attention to this advisory.



**Lake Spokane (Long Lake)**  
Two meals per week:  
Rainbow Trout, Yellow Perch  
One meal per week:  
Mountain Whitefish  
One meal per month:  
Brown Trout & Large-scale Sucker

**From Nine Mile Dam to Upriver Dam**  
Do Not Eat:  
Large-scale Sucker  
All other species: One meal per month

**From Lintier Dam to the Idaho Border**  
Do Not Eat Fish  
Catch & Release Only

**You can reduce your exposure to PCBs if you prepare your fish this way:**

- When cleaning fish, remove the skin, fat, and internal organs before cooking.
- Cook fish on a rack so the juices and fat will drip off.
- Do not eat the head, juices, bones, organs, guts, fat, and skin.
- Consume younger, smaller fish.



**Questions?**  
Spokane River Fish Advisory:  
Spokane Regional Health District  
Mike LaScola 509.324.1574  
www.srhfd.org

**Fish Advisories in Washington State:**  
WA Department of Health  
Toll-Free 1-877-485-7316  
www.doh.wa.gov/fish

DOH PUB NO. 334-164

**Washington State Mercury Advisory:** Women who are or might become pregnant, nursing mothers, and young children should follow this advice due to high mercury levels in these fish statewide:  
Northern Pike/minnow - Do Not Eat      Largemouth and Smallmouth Bass - Two meals per month



# Water Quality Criteria for PCBs

- Washington State
  - 170 pg/l (parts per quadrillion) in water
  - Translates to 5.3 ppb (parts per billion) for fish tissue
- Spokane Tribe
  - 3.37 pg/l in water
  - Translates to 0.1 ppb for fish tissue

# PCBs in the Spokane River

- Approximately 1.6 pounds per year of PCBs are discharged to the Spokane River.

Facility	RM	Total PCB (pg/l)	Discharge (ML/day)	Total PCB Load (mg/day)
Liberty Lake WWTP	92.7	1,121	2.5	2.9
Kaiser Trentwood	86.0	1,080	60	65
Inland Empire Paper	82.5	2,544	18	45
Spokane WWTP	67.4	1,364	143	194
Total =				307

ML/day = megaliters/day [0.264 MGD (million gallons per day)].

# Reductions Needed In Spokane River to Meet Water Quality Standards

Location on Spokane River	Harmonic Mean Flow <sup>a</sup> (l/d)	Current t-PCB Conc. <sup>a</sup> (pg/l)	Current t-PCB Load (mg/day)	Target t-PCB Load (mg/day) at Water Quality Criterion		t-PCB Load Reduction Required to Meet Water Quality Criterion	
				NTR (170 pg/l)	Spokane Tribe (3.37 pg/l)	NTR	Spokane Tribe
Stateline	4.51E+09	106	477	766	15	none required	97%
Upriver Dam	4.59E+09	117	537	780	15		97%
Monroe St.	7.11E+09	199	1,413	1,208	24	15%	98%
Ninemile	7.31E+09	311	2,281	1,243	25	46%	99%
Little Spokane River	4.85E+08	199	97	83	2	15%	98%
Lake Spokane (lower)	9.19E+09	399	3,664	1,562	31	57%	99%
Little Falls	9.19E+09	399	3,664	1,562	31	57%	99%
Spokane Arm	9.19E+09	399	3,664	1,562	31	57%	99%

# How do we address the problem?

- Source control strategies generally fall into four different categories:
  - Technology-based Strategies
  - Local Regulatory Strategies
  - Public and Business Outreach
  - Regional, National, or International Strategies.



# Standards May Get More Stringent

- EPA's default fish consumption rates are 17.5 g/day for adults in the general population.
- 142.4 g/day for subsistence fishers.
- **Oregon's new standard: 175 g/day.**
- EPA rejected Idaho's use of 17.5 g/day.
- Alaska is reviewing rates.

